

REVISION OF AUSTRALIAN *CHAETARTHRIA* STEPHENS (COLEOPTERA: HYDROPHILIDAE)

C. H. S. WATTS

WATTS, C. H. S. 2000. Revision of Australian *Chaetarthria* Stephens (Coleoptera: Hydrophilidae). *Records of the South Australian Museum* 33(1): 29–31.

The genus *Chaetarthria* in Australia is revised. The synonymising of *Chaetarthria australis* Knisch and *C. sjostedti* Knisch with *C. nigerrima* (Blackburn) by Balfour-Browne is confirmed. This species is the only one present in Australia. It is patchily distributed in coastal northern and eastern Australia.

C. H. S. Watts, South Australian Museum, North Terrace, Adelaide, South Australia 5000.
Manuscript received, 22 October 1999.

The hydrophilid genus *Chaetarthria* Stephens, 1835 contains numerous species, predominantly in the Neotropical and Nearctic regions (Hansen 1991). The extensive New World fauna has been reviewed by Miller (1974) and Spangler (1977). In comparison the Australian fauna is depauperate with only one recognised species, *C. nigerrima* (Blackburn, 1891), although two others, *C. sjostedti* Knisch, 1922a and *C. australis* Knisch, 1922b, have been described. None are described from nearby Indonesia or New Guinea but I would expect the genus if not the species to also occur there. Apart from the original descriptions nothing has been written on the Australian species.

The genus belongs in the tribe Chaetarthriini, readily recognised by their globular shape and either divided eyes or the first and second ventrites having a large cavity normally filled with a hyaline mass and covered by long setae arising from the front edge of the first ventrite (Hansen 1991). The tribe is represented in Australia by two genera: *Amphiops* and *Chaetarthria*. From *Amphiops*, *Chaetarthria* can readily be separated by their undivided eyes, small size (< 2.0 mm.) and, in the Australian species at least, virtual lack of punctures.

The collections from which specimens were examined are listed under the following abbreviations:

- ANIC Australian National Insect Collection, CSIRO, Canberra
BMNH Natural History Museum, London
MV Museum of Victoria, Melbourne
NTM Northern Territory Museum, Darwin
NRS Naturhistoriska Riksmuseet, Stockholm
SAMA South Australian Museum, Adelaide

DPIM Queensland Department of Primary Industries, Mareeba.

UQIC University of Queensland Insect Collection, Brisbane

SYSTEMATICS

Genus *Chaetarthria* Stephens, 1835

Chaetarthria nigerrima (Blackburn, 1891)

Paracymus nigerrimus Blackburn, 1891.

Chaetarthria nigerrima (Blackburn, 1891); J. Balfour-Browne, 1938; Gentili, 1993.

Chaetarthria australis Knisch, 1922b; J. Balfour-Browne, 1938.

Chaetarthria sjostedti Knisch, 1922b; J. Balfour-Browne, 1938.

Types

Paracymus nigerrimus Blackburn. *Lectotype*: 'Australia Blackburn Coll B.M. 1910-236' 'Paracymus nigerimus, Blackb' 'T 3566' BMNH. Blackburn gave the locality as 'Mountains of Victoria' in his original paper. Herein designated.

Chaetarthria sjostedti Knisch. *Lectotype*: 'Ma-landa' 'Queensl. Mjoberg' 'Type' 'Chaetarthria Sjostedti m. Nsp. A.Knisch 1921' '5348 E91 +' with red TYPUS label, NRS. Herein designated.

Paralectotypes: 1, 'Ma-landa' 'Queensl. Mjoberg' '5347 E91+', (missing head and thorax), NRS. 1, '3566' 'Victorian Alps Blackburn' 'Paracymus nigerrimus, Blackb. Co-type', SAMA. Herein designated.

Chaetarthria australis Knisch. Syntypes: Not located. Type locality given as Gayndah, Queensland. Knisch 1922b gives the locations of the types as Museum Godeffroy No 10696 and 10701 and a further example in the Hamburg Museum.

Description (number examined, 296) Fig. 1

Length 1.5–2.5mm. Round, deep bodied, height of elytra a bit less than half length; dorsal surface shiny black, sides of pronotum, edges of elytra and apex of elytra light testaceous-yellow, ventral surface dark-testaceous, appendages a little lighter.

Dorsal surface: Head relatively narrow, sides converging somewhat in front of eyes, finely reticulate, very weakly punctate; labrum large, front edge straight or very weakly concave, with moderate punctures stronger than on rest of head. Pronotum smooth apart from weak fine microreticulation and sparse weak punctures at sides and along front margin, disc virtually impunctate. Elytron shiny, microreticulation weak, about twenty rows of serial punctures (these are very weak and hard to trace other than from the ventral surface with transmitted light), sutural groove strong in apical half, then progressively weaker forwards but still traceable almost to scutellum.

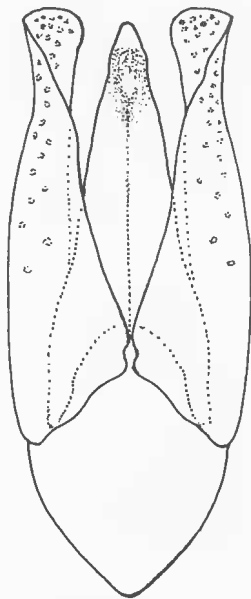


FIGURE 1. Dorsal view of aedeagus of *Chaetarthria nigerrima* (Blackburn) from Millstream, W.A.

Ventral surface: Shiny, microreticulation weak; metasternum with quite strong setae in middle; first ventrite with confluent row of very long, strong, golden setae along front edge reaching to third ventrite, a similar row of much shorter setae on rear edge of second ventrite pointing backwards, short inward-pointing setae at sides of second ventrite; other ventrites with quite dense covering of short setae/spines except for front half of third ventrite; epipleuron broad in front, rapidly narrowing to middle, absent behind, almost in same plane as sides of elytron.

Appendages: Maxillary palpi relatively short, apical segment about 2.5 times length of penultimate, with 3–5 small, elongate sensillae on the outside at base. Protibia relatively narrow, parallel-sided for most of length, with numerous blunt spines towards apex but without modified setae; procoxa with around eight strong spines on ventral surface near base. Ventral surface of pro- and mesofemora covered with short golden setae except close to base, metafemur without such setae except along front edge.

Male: Basal piece of aedeagus short, paramere tips flared, truncated, apical portions and inner edges semi-membranous and less chitinised than rest of paramere (Fig.1).

Remarks

Chaetarthria nigerrima has a wide distribution around northern Australia from the Pilbara region of Western Australia to eastern Victoria. It is not common but when present is often abundant in a small area. I suspect that the species might be semi-colonial. One such aggregation that I found in the Northern Territory was living in small tunnels in wet sand just above, and possible also below, the waterline at the edge of a sandy pool in a drying river bed. Other specimens are recorded as having been collected among gravel at the water's edge. It also comes to light which is how most of the specimens were collected. Miller (1974) likewise recorded the genus in North America as predominantly living in sand and gravel at the edge of still or relatively still water, and also flying to light. The larva of *C. nigerrima* is unknown but that of the European *C. seminulum* Herbst, 1797 has been described by Böving and Henriksen (1938).

Knisch, who was unaware of Blackburn's species, described two additional species, one from Gayndah, Queensland and the other from Malanda, Queensland. The type of *P. nigerrimus* Blackburn and the type of *C. sjostedti* belong to the same species. The types of *C. australis* would

appear to have been lost but there is nothing in the description that would clearly distinguish it from *C. nigerrima* and this and the fact that all modern specimens appear to belong to the one species lead me to agree with Balfour-Browne (1938) that *C. australis* Knisch, 1922b is a junior synonym of both *C. nigerrima* (Blackburn) and *C. sjostedti* Knisch, 1922a.

Note on priority: The description of *C. sjostedti* was published on the 24th of January 1922 (Knisch 1922a), not in 1921 as given in Knisch 1924. In June the same year Knisch published the description of *C. australis* and at the same time also reprinted his earlier description of *C. sjostedti* (Knisch 1922b) as a new species.

Distribution

Australian Capital Territory: Bendora Dam, ANIC; Black Mountain, ANIC. **New South Wales:** 17 km SE Braidwood, ANIC; Cabbage Tree Creek, Canberra-coast road, ANIC; Chichester State Forrest, ANIC; Valery, ANIC. **Northern Territory:** Bessie Springs, ANIC; Nourlangie Creek, 20 km SSW Jabiru, SAMA; 19 km E by S Mt Borradaile, ANIC; Muirella Park, Kakadu National Park, DPIM; U. D. P. Falls, Kakadu National Park, NTM; Upper South Alligator River, ANIC. **Queensland:** Bushland Beach, 20 km N Townsville, SAMA; Bushy

Creek, Mossman-Mt Lewis road, ANIC; Cairns District, SAMA; 25 km N Cooktown, ANIC; 30 m N Cooktown, UQIC; 70 km SW Greenvale, SAMA; Henrietta Creek, Palmerston National Park, UQIC; Iron Range, DPIM; Kennedy Creek S of Laura, DPIM; 25 km N Laura, DPIM; Kuranda, ANIC; 30 km W Laura, DPIM; 22 km S Mareeba, DPIM; Millaa Millaa Falls, UQIC; Mossman-Mt Lewis road near Julatten, ANIC; Mt Surprise, DPIM; 22 km N Mt Molloy, ANIC; North Pine River, UQIC; Palmerston National Park, UQIC; 15 km NNW South Johnstone, DPIM; 20 km S Townsville, SAMA; Stewart Range, SAMA; Walkamin, DPIM; Windsor Tableland, DPIM. **Victoria:** Genoa, ANIC; Meredith, MV; Victorian Mountains, BMNH. **Western Australia:** Fitzroy River, ANIC; Millstream, ANIC; 1 km N Millstream, ANIC; Wittenoom Gorge, ANIC.

ACKNOWLEDGMENTS

I would like to thank the curators of the collections listed earlier for allowing me ready access to specimens in their care. Ms D. Churches put the final touches to the manuscript, Mr R. Gutteridge prepared the figure and the librarians, Mrs M. Anthony and Mrs J. Evans, helped with the library references particularly the dating of Knisch's two publications.

REFERENCES

- BALFOUR-BROWNE, J. 1938. A contribution to the study of the Palpicornia.1. *The Entomologist's Monthly Magazine* **74**: 102–107.
- BLACKBURN, T. 1891. Further notes on Australian Coleoptera, with descriptions of new genera and species. *Transactions of the Royal Society of South Australia* **14**: 65–153.
- BÖVING, A. G. & HENRIKSEN, K. L. 1938. The developmental stages of the Danish Hydrophilidae. *Videnskabelige Meddelelser fra den Dansk Naturhistoriske Forening i København* **102**: 27–162.
- GENTILI, E. 1993. *Paranacaena* Blackburn, 1889: a valid genus (Coleoptera, Hydrophilidae). *Giornale Italiano di Entomologia* **6**: 285–296.
- HANSEN, M. 1991. The Hydrophiloid Beetles. Phylogeny, Classification and a Revision of the Genera (Coleoptera, Hydrophiloidea). *Biologiske Skrifter* **40**: 1–368.
- KNISCH, A. 1922a. Results of Dr E. Mjöberg's Swedish Scientific Expeditions to Australia 1910–1913. 29. Hydrophilidae. *Arkiv för Zoologi* **14**, number 17: 4pp.
- KNISCH, A. 1922b. Hydrophiliden-Studien (Op. 10.) *Archiv für Naturgeschichte* **88**: 87–126.
- KNISCH, A. 1924. Hydrophilidae, in 'Coleopterorum Catalogus pars 79'. Eds. Junk and Schenkling. Berlin, 306pp.
- MILLER, D. R. 1974. Revision of the New World *Chaetarthria* (Coleoptera: Hydrophilidae). *Entomologica Americana* **49**: 1–123.
- SPANGLER, P. J. 1977. Three new Ecuadorian species of the aquatic beetle genus *Chaetarthria* (Coleoptera: Hydrophilidae). *Proceedings of the Biological Society of Washington* **90**: 566–578.